Title: SOURCES, TRANSPORT, AND VARIABILITY OF WATER TURBIDITY.

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Project Summary: The South Florida ecosystem has shown significant changes in habitat since the late 1980's. Turbidity caused by sediment and phytoplankton blooms is considered a factor in changes in habitat. Turbidity increases have been implicated as a factor causing declines in seagrass. Reef decline may be associated with water originating in Florida Bay and the Gulf of Mexico. Characterization of the water quality, benthic habitat change, and water transport has depended on both field sampling and modeling programs. A challenge for these programs is to establish the context of events and distributions with sufficient spatial and temporal detail for characterization, description, and understanding. Remote sensing from satellite allows a description of conditions over a wide region with a frequency and density of coverage that can significantly aid in the field and modeling efforts. Already, a time series of Advanced Very High Resolution (AVHRR) satellite imagery has been created for turbidity covering over 13 years. By continuing this record with an ocean color sensor, the Sea-viewing Wide Field-of-View Sensor (SeaWiFS), this project will extend the record to nearly 20 years, as well as describing already processed for South Florida and Gulf of Mexico to update the turbidity time series of AVHRR from 1998 through to the present. SeaWiFS imagery will be examined for variations in water color that can be associated with algal looms. The project will identify areas of broad scale change in South Florida that can be associated with changes in turbidity and seagrass cover in conjunction with the seagrass cover programs. The data set will be analyzed to identify the frequency and distribution of events that introduce turbid and discolored water in to the area. The imager will further be correlated to field observations of turbidity and chlorophyll

	in order to relate the products to the existing programs, as well as establishing the capability of identifying blooms in an optically-shallow environment. Patterns will be related to modeled and measured currents and imagery will be provided to the modeling community in support of their activities. The resultant imagery will be provided to the community through Internet distribution.
Relevance to Restoration and/or Resource Management:	Remote sensing offers a capability for characterizing spatial and temporal patterns that can complement and extend existing monitoring and modeling efforts, both of which will be utilized to assess the success of the Comprehensive Everglades Restoration Plan.
Geographic Area:	South Florida coastal waters.